

# Market Outlook Report



September 30, 2004

## **Acknowledgments**

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## **EXECUTIVE SUMMARY**

Despite the two Kona Coffee price crashes in the early and late 1990's, Kona Coffee production grew since the mid-1990, and price performed exceptionally well since the mid 1970's. Other Hawaii-grown varieties experienced rapid output expansion and strong price performance. Industry aggregate output grew from 2.9 to 8.7 million pounds of parchment between 1993/94 and 2003/04. In value, parchment production grew from \$6.53 million to \$23.49 million over this period. The number of farms increased from 580 to 715 and acreage harvested from 4,200 to 5,900 statewide.

Although the total amount exported from Hawaii annually is unknown, most Hawaii-grown coffees were exported, with the majority going to the Mainland in green. U.S. trade statistics suggest that some of Hawaii-grown coffee sold to Mainland buyers may have been further exported to Japan and elsewhere. Exports of Hawaii-grown coffees directly to all foreign destinations were valued at \$2.06 million in 2003 with Japan accounting for 91.3%. The share of green beans in total coffee exports has shrunk, while roasted beans expanded.

With geographical proximity and regional economic growth trends, the West Coast U.S. Mainland and Asia Pacific Rim economies will continue to offer market opportunities for high quality Hawaii-grown coffee. Japan will continue to be a major foreign market for Hawaii-grown coffees. Singapore, the fourth largest importer of U.S. coffee in 2003, and China seem to offer expanding market opportunities to high quality Hawaii-grown coffee. However, tariff barriers may hamper growth of Hawaii-grown coffee in the Asian markets.

Although barriers to entry in a specialty coffee market are numerous, the future of the specialty market is one of growing competition. Hawaii-grown coffee producers engage in product differentiation as a main competition method, which does not create direct pressure on prices. However, the premium that Hawaii-grown coffees command, especially for Kona Coffee, creates an incentive for possibly too rapid growth and counterfeit operations, which could depress prices.

To foster further growth, bean grades and point of origin certification and enforcement of the "Truth Labeling" law, currently administered by the HDOA, are critical. Increasing cooperation among farmers in production and marketing through an agricultural cooperative will mitigate market risk associated with short-run supply glut. Strong cooperative or association could also become a more effective and efficient private body in quality control and industry monitoring role. Pests can be a serious threat and requires monitoring on a regular basis. Finally, land and water resource management and appropriate labor policy cannot be undermined if the competitiveness of Hawaii coffee industry is to be sustained in the long run.

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## **I. Introduction**

This report is part of a series of commodity market outlook report. The objective of this report is to provide Hawaii's coffee industry and other agricultural community members an overview of market conditions and trends of in-state, mainland, and foreign markets. In addition, competition, market opportunity and challenges facing Hawaii's coffee industry are briefly addressed.

Hawaii's coffee industry has a relatively long history, which can be traced back to 1825. Coffee became Hawaii's export commodity before the second half of the nineteenth century and the industry has gone through a number of growth and decline phases over time. In the past ten years, Hawaii's coffee farm industry experienced a new phase of relatively rapid expansion, a revival from more than a decade-long slump. Although Hawaii-grown coffee's estimated farm gate value in 2003 accounted for less than 5% of farm gate value of Hawaii's total agricultural output, it ranked high on the state's list of specialty crops. As a single tree-crop, coffee ranked second only to macadamia nuts in terms of farm production value.

The economic importance of coffee is much more significant than the farm gate value. There is an array of activities, including various steps of processing and delivery, which can add a significant value to coffee before reaching final consumers. The significance of coffee in its contribution to the economy goes beyond its sales value and related businesses which provide inputs to the coffee industry from farms to retail stores. Coffee products are used for making candies, cakes, beverages, etc. In addition, coffee farm industry creates an economic value to Hawaii's tourism industry.

## **II. Local Production and Market**

### ***Production history and trends***

Coffee farm operations in Hawaii are highly diverse in cultural practice and scale, from traditional hand-picked with several acres of farm land to among the world's most technologically advanced and mechanized estate farm covering thousands of acres. Altogether 7,300 acres of land were used for plantation in 2003, including 3,600 acres in Hawaii County, 3,400 acres in Kauai County, and Honolulu and Maui counties made up the remaining acreage.<sup>1</sup>

According to Hawaii Agricultural Statistics Service (HASS), total production in the 2003/04 harvesting season was approximately 8.7 million pounds of parchment equivalent, worth \$23.5 million at farm gate price (see details in Table 1). Hawaii produces less than a percent of world's total commercial coffee production. A growing demand for high quality specialty coffee in the early 1980s, when Kona was the only area where commercial coffee farming existed in Hawaii, outpaced production in the region. This led commercial coffee plantations to expand to the counties of Honolulu,

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<sup>1</sup> Kauai acreage is obtained from Hawaii Coffee Association's pamphlet.

Kauai, and Maui by the late 1980s and has since changed the nature of Hawaii's coffee industry.

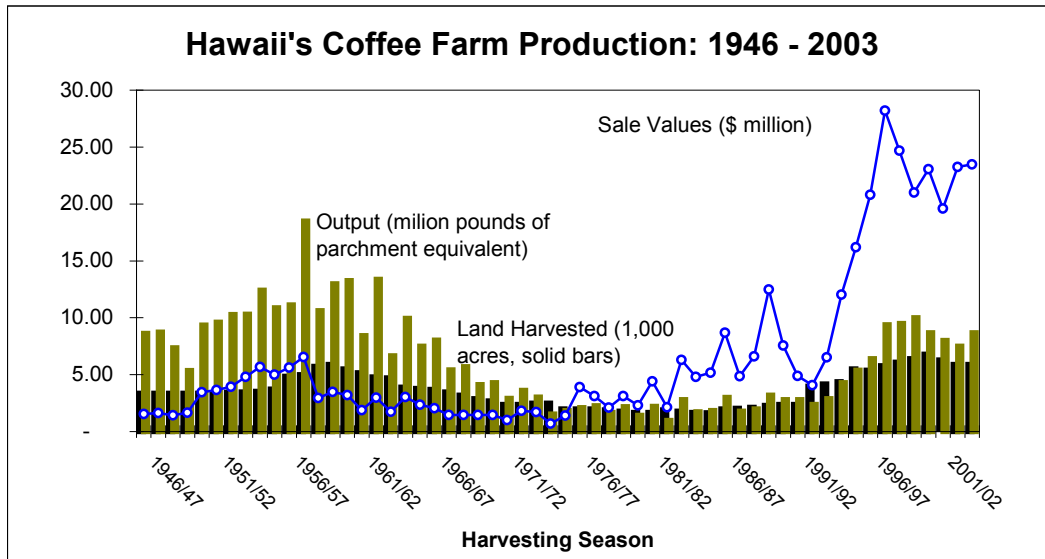
**Table 1** Hawaii Coffee Farm Output<sup>a</sup>: 1989 - 2003

	Marketing (million lbs)			Sales Value (\$ million)		
	Hawaii	HKM <sup>b</sup>	State Total	Hawaii	HKM	State Total
						Nominal
1989/90	3.07	0.13	3.20	12.41	0.07	12.48
1990/91	2.46	0.34	2.80	7.31	0.25	7.56
1991/92	2.32	0.48	2.80	4.58	0.32	4.90
1992/93	1.79	0.61	2.40	3.69	0.39	4.08
1993/94	1.96	0.94	2.90	5.88	0.65	6.53
1994/95	2.10	2.20	4.30	8.40	3.63	12.03
1995/96	2.50	2.90	5.40	11.50	4.70	16.20
1996/97	2.30	4.10	6.40	10.81	9.96	20.77
1997/98	2.85	6.55	9.40	16.25	11.99	28.23
1998/99	3.50	6.00	9.50	16.10	8.58	24.68
1999/00	3.00	7.00	10.00	9.30	11.69	20.99
2000/01	3.80	4.90	8.70	15.20	7.84	23.04
2001/02	3.10	4.90	8.00	13.18	6.42	19.59
2002/03	4.10	3.40	7.50	15.99	7.26	23.25
2003/04	3.40	5.30	8.70	12.58	10.91	23.49

<sup>a</sup> Both quantity and value are expressed in parchment equivalent basis. <sup>b</sup> Counties of Honolulu, Kauai, and Maui combined. Molokai is included in the Maui County. Data source: Hawaii Agricultural Statistics Service (HASS).

Figure 1 shows fluctuations in farm physical output and farm production values of *parchment equivalent basis* over the past 59 harvesting seasons.<sup>2</sup> (Hereafter, parchment volume and value mentioned are for parchment equivalent basis.)

**Figure 1**



Data Source: HASS.

<sup>2</sup> As estimated by HASS, the aggregate of sales of all coffee forms (cherry, parchment, green) at farm gate, with sales of cherry and green converted into parchment value, called *parchment equivalent basis*, usually lower than actual parchment price.

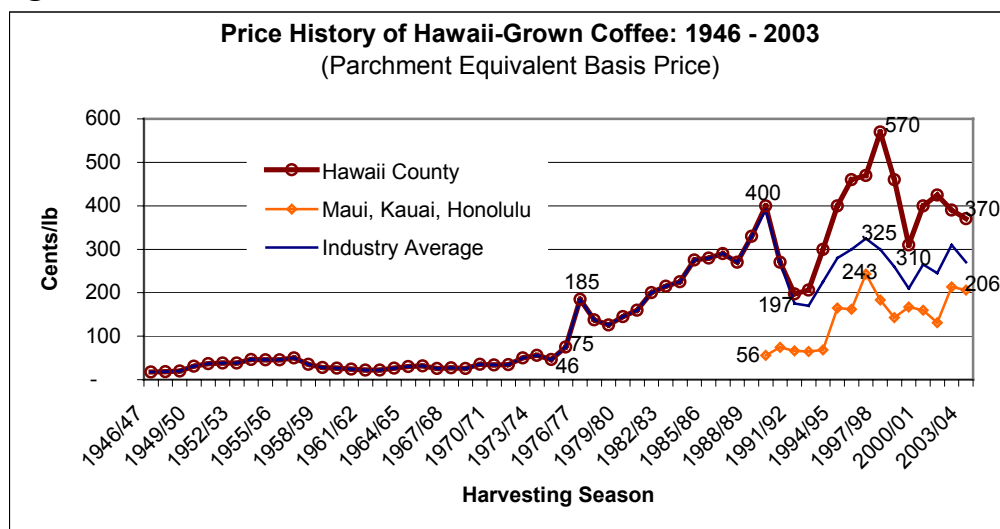
Industry's aggregate output expanded noticeably in the 1994/95 harvesting season (Table 1), with new regions together producing more than half of the state's total production of 4.3 million pounds of parchment, marking a new phase of growth in the Hawaii's coffee industry. Output growth continued at rapid pace in the new regions until 1998. Between 1993 and 2003, industry aggregate annual production grew 170% in farm gate sale value of parchment.

In 2003, there were a total of 715 coffee farms in the state with 690 located in the Hawaii County alone. While coffee farms in Hawaii County accounted for 96.5% of the state's total, they accounted for 49% of industry's total land in crop. An average coffee farm in Hawaii County occupied 5.2 acres of land in crop. The remaining farms are in Honolulu, Kauai, and Maui counties.

### Price history and trends

Figure 2 shows fluctuations in the average parchment price of Hawaii-grown coffee from the 1946/47 through the 2003/04 harvesting seasons. In 1975, after almost two decades of a series of price slumps and stagnation at low levels, Kona Coffee price (Hawaii County, in Figure 2) rebounded, an effect of frost in the world's renown coffee producer Brazil which caused coffee prices in the global market to rise.<sup>3</sup> The average price of Kona Coffee parchment jumped from 46.4 cents/lb in 1974/75 to 75.2 cents/lb in 1975/76. In the next season it jumped to 185 cents/lb and continued to fluctuate upward in the 1980s. Prices of coffees grown in Maui, Kauai, and Honolulu counties, although started low, also performed well (Figure 2).

**Figure 2**



Notes: Molokai is included in Maui. Data Source: HASS.

<sup>3</sup> About 95% of coffees grown in the Hawaii County is comprised of Kona Coffee.



Two relatively serious price crashes occurred for Kona Coffee in the 1990's which led to significant changes in the industry. The first occurred with a series of sharp plunges in the average parchment price from 400 cents/lb in 1989/90 to 270 cents/lb and to 197 cents/lb in each subsequent year. A major event that triggered the crash was an abrupt ending of the purchase agreement between a major processor/distributor and farm cooperative, due to a change in ownership.<sup>4</sup> The second crash occurred with a plunge from 570 cents/lb in 1997/98 to 460 cents/lb and to 310 cents/lb in each subsequent year. Price dropped again in the 2002/03 and 2003/04 seasons. The reason for the late-1990's crash is less clear than for the first. Nonetheless, an analysis indicates that counterfeit Kona Coffee was indirectly responsible for the event that triggered both events.<sup>5</sup> Also, statistical analysis indicates that falling Colombian Mild Arabica coffee price and rising competition among Hawaii-grown brands, especially due to the rapid output expansion in the new growing regions, were likely contributors to the second crash.

Despite all the turbulences between 1975 and 2003, Hawaii-grown coffee prices performed exceptionally well. Over this period, the average parchment price of Kona Coffee rose approximately 704% (from 46 cents/lb to 370 cents/lb), or a 10.1% increase on a year-to-year average basis. For coffee grown in Kauai, Honolulu, and Maui, the average parchment price increased 268%, from 56 cents/lb to 206 cents/lb between the 1989/90 and 2003/04 season, a 15.8% increase on a year-to-year average basis.

In Figure 3, a price line of Hawaii-grown green coffee bean exported directly to foreign destinations (HI Green) is compared with price lines of coffee beans traded in the world commodity market. Prior to 1996, all Hawaii-grown coffee exported was Kona Coffee. After that, a negligible amount of other Hawaii-grown varieties may be included in the export data in some years. Except for 1995, when it was registered at 122 cents/lb, green Kona Coffee direct export price maintained at high levels, many times above those of the Colombian Mild Arabica. Fluctuations of HI Green followed similar patterns, although not statistically strong, as those for parchment price in Figure 3.<sup>6</sup> However, the first crash of green bean export price, which began in 1990, lasted over a longer period and was more severe than that of parchment. In 2003, Hawaii-grown green bean direct export price accounts for only about 4% of Hawaii's total or 10% of Kona Coffee total marketing amount of green equivalent.<sup>7</sup> Thus it should not be considered as a representative price for Hawaii-grown beans as a whole.

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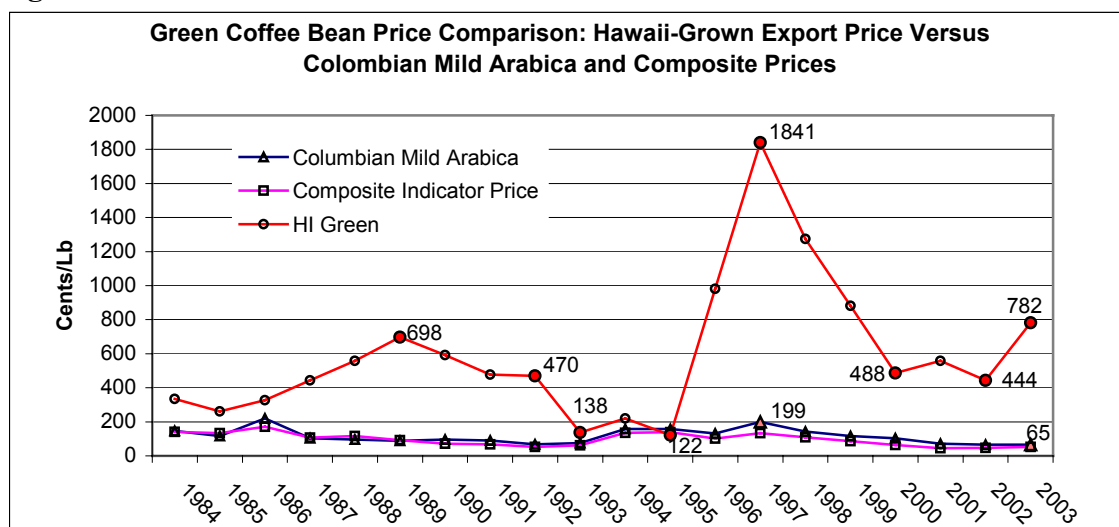
<sup>4</sup> In 1990, the Superior Coffee Hawaii, owned by Superior Coffee/Sara Lee, a Mainland based company, which bought the majority of Kona Coffee beans, was sold to K.C. Brewer, a Hawaii-based company.

<sup>5</sup> Southchack (October 2004). *Hawaii's Coffee Industry: Structural Change and Its Effects on Farm Operations*. Hawaii Department of Agriculture.

<sup>6</sup> The simple correlation coefficient measuring the relationship between HI parchment price and HI green bean export price over the 1984 and 2003 period is 0.58.

<sup>7</sup> The amount of roasted coffee beans was converted into green equivalent.

Figure 3



**Notes:** **HI Green** represents Hawaii-grown green bean price (Free Along Ship Export Value (F.A.S.)) of domestic coffees exported directly to foreign destinations; it is the weighted average price of regular coffee (not decaffeinated) and decaffeinated coffee combined for 1978-1988, and of regular coffee only for 1989-2003. **Composite Indicator Price**, according to the ICO's *Rules on Statistics Indicator Price*, (March 2002), is the weighted average of the New York market, Germany market, and France market of four major coffee classifications including Colombian Mild Arabicas Group, Other Mild Arabicas Group, Brazilian and Other Naturals Group, and Robustas Group. Data sources: HI bean prices are calculated from data provided by the Bureau of Census; other data are converted from data compiled by the ICO.

### *Product share of in-state market*

The majority of Hawaii-grown coffee is exported, in green, to brokers and roasters in the Mainland. The remaining is either exported directly to foreign destinations or sold within the state. Hawaii-grown coffee sold in the in-state market is either in the form of roasted beans or ground coffee. There are various channels where Hawaii-grown coffees are sold in the in-state market including hotels, restaurants, supermarkets, specialty shops, and stores in visitor retail centers. An unknown quantity of roasted beans is sold annually as gift items to out-of-state visitors.

Roasters who market Hawaii-grown coffee to retail specialty stores, supermarkets, hotels, and restaurants also sell import varieties. Green beans of various varieties are imported into Hawaii annually for blending with Kona Coffee. However, the market share of Hawaii-grown coffee in the in-state consumers market is unknown due to a lack of shipment data to and from other states. It is beyond the scope of this outlook report to pursue a survey for the purpose of estimating the in-state market.

## **III. Potential Demand and Price Trends of Export Markets**

### *U.S. Mainland markets*

Most Hawaii-grown coffee exported from Hawaii went to the West Coast, U.S. Mainland. Traditionally, the main buyers were roasters and brokers, who then resold

green beans to other firms in domestic and foreign markets. However, with new and improved packaging technology and marketing tools that were introduced in the eighties and nineties, respectively, the industry saw a growing trend of exports of roasted beans directly from Hawaii to Mainland wholesalers, retailers, and institutional markets. Direct mail order, from farm to final consumers, is also a growing trend.

The U.S. as the world's largest coffee importer imported about one-fifth of the world's total imports in 2002. While the U.S. share in the world's total annual import volume fluctuated downward from 25.2% in 1983 to 20.1%, by the end of 2002, the U.S. total import volume has increased suggesting that total world coffee trade has increased. U.S. annual total import volume of green beans rose from 2,101.31 million pounds in 1995 to 2,860.52 million pounds in 2000, but dropped slightly to 2,689.05 million pounds in 2003. In contrast to that of volume, total U.S. import value of green beans dropped sharply due to a series of global price slumps, from a height of \$3,575.35 million in 1987 to \$1,356.62 million in 2000, but regained to \$1,612.09 million in 2003.

Seven major states serve as ports of entry for coffee imported into the United States annually. They include New York, Louisiana, Virginia, Texas, Florida, California, and Washington. Together they received more than 90% of U.S. total annual coffee imports from foreign destinations, which then further transported to their final destinations in the regional market and re-exported to foreign markets. Table 2 summarizes imports arrived in each of these states.

**Table 2** **Top Coffee Importing States: 1995-2003**  
(\$ million\*)

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total U.S. Imports	3,083.93	2,604.96	3,726.63	3,238.50	2,720.09	2,529.50	1,515.40	1,524.64	1,776.69
1. New York	353.49	299.05	591.15	500.34	515.61	512.64	325.46	348.28	425.59
2. California	462.28	431.42	499.19	508.35	358.56	332.95	240.73	217.21	280.97
3. Louisiana	693.86	491.28	832.32	673.42	606.98	623.20	281.35	224.15	271.20
4. Texas	697.59	615.07	753.33	578.72	413.30	266.48	156.71	199.67	199.69
5. Florida	482.92	405.24	539.73	485.69	309.80	323.86	125.85	145.78	178.95
6. Virginia	98.46	84.82	100.56	101.21	124.17	90.50	87.80	90.54	135.13
7. Washington	71.26	61.19	111.17	107.49	93.54	88.78	80.09	108.49	117.37
8. All others	224.08	216.89	299.18	283.28	298.13	291.08	217.42	190.53	167.81
9. Percent Share of Top seven States	92.7%	91.7%	92.0%	91.3%	89.0%	88.5%	85.7%	87.5%	90.6%

\* Custom Import Value. Data Source: U.S. Dept. of Commerce, Bureau of the Census, in the World Trade Atlas.

### ***Foreign markets***

Hawaii-grown coffees made their way to foreign consumers in a number of channels. A portion traveled via the Mainland, a sizeable amount was bought and taken home by tourists, others went via direct mail order, and some were shipped abroad directly passing through the Custom Service as domestic merchandise. However, due to data limitation, export statistics presented in this report account for only the amount

exported directly from Hawaii to foreign destinations, which passed through the Custom Service. In 2003, this amount accounted for about 4% of state's total green bean production, or about 10% of Kona Coffee green beans.<sup>8</sup> Table 3 shows major foreign market destinations for Hawaii-grown coffees together with the aggregate dollar values of all coffees exported from Hawaii.

**Table 3 Major Foreign Markets for Hawaii-Grown Coffee Exported Directly from Hawaii**

	(\$1,000)								
	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>World Total</b>									
<b>All Coffees</b>	1,819.6	3,286.4	3,352.0	4,543.4	3,479.2	3,225.4	3,993.9	2,381.8	3,879.6
<b>Hawaii-Grown Coffees*</b>	947.5	1,319.3	1,765.3	3,431.3	883.9	2,716.9	2,085.1	1,626.6	2,287.3
Japan	833.0	415.3	977.4	3,167.1	597.8	1,978.3	1,860.5	1,418.4	2,058.5
Switzerland	-	-	-	-	-	-	-	-	175.0
Taiwan	-	-	-	-	6.6	26.9	3.4	20.0	35.3
Korea, South	103.4	799.5	741.3	247.1	275.6	399.7	217.7	188.2	10.6
China	11.1	100.4	46.6	17.1	-	-	-	-	-
Others	0.0	4.1	-	0.0	3.9	312.0	3.5	0.0	7.8

Data Source: U.S. Dept. of Commerce, Bureau of the Census.

### *Japan market*

Japan continued to be a major foreign market for Hawaii-grown coffees. In 2003, Japan received 93% of the total export volume for all coffee types—green and roasted beans of regular (not decaffeinated) and decaffeinated coffees. The remaining portion went to other parts of Asia, especially South Korea and Taiwan, and Europe.

Japan became the world's third largest coffee importer since 2000 in terms of import volume, following the U.S. and Germany, according to data reported by the ICO. Japan's coffee imports were almost entirely for domestic consumption. In terms of import value, the largest suppliers for Japan's imports in 2003 include Colombia, Brazil, Indonesia, Guatemala, Ethiopia, Jamaica and the U.S. However, Japan's import from the U.S. is markedly different from elsewhere. While 98.8% of Japan's 2003 total coffee import was in green form, only 15% of Japan's total coffee import from the U.S. was green.

Table 4 summarizes Hawaii-grown coffees exported directly to Japan between 1995 and 2003. A contrasting shift between the export volume of green and roasted beans over the 1995-2003 period is noticeable in Table 5, with roasted regular coffee beans growing 326% and green regular coffee beans declining 77%. Despite the fact that Hawaii's 2003 total export volume of green beans to Japan declined from the 1995 level, excluding decaffeinated coffee, the total value rose 44%.

<sup>8</sup> Virtually all of the Hawaii-grown green and roasted beans exported directly to foreign destinations that went through the custom service were Kona Coffee. The percent share includes roasted beans converted into green equivalent using 83% green-to-roast conversion rate.

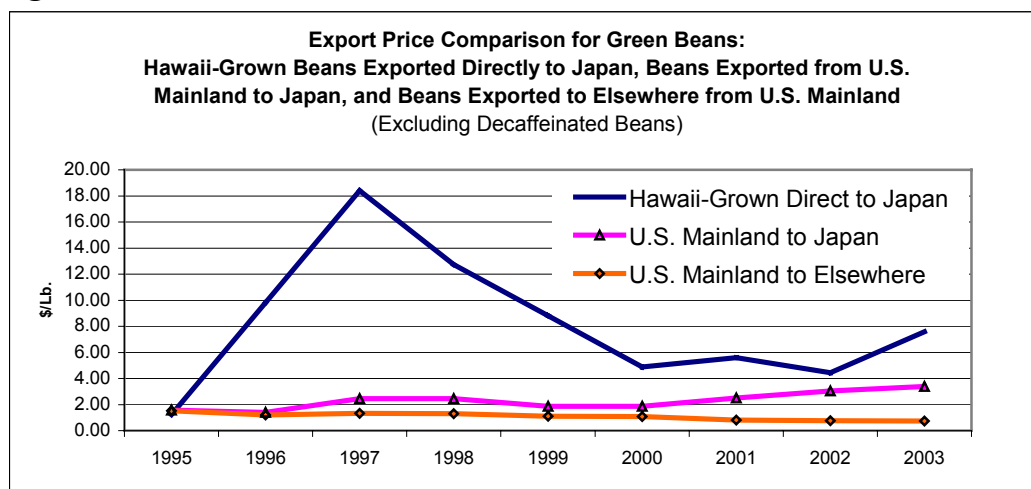
**Table 4 Hawaii-Grown Coffee Exported Directly to Japan**

	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Volume (1,000 lbs)</b>									
Green Not Decaffeinated	420.74	-	22.50	178.40	-	248.75	178.70	108.29	95.72
Green Decaffeinated	88.92	22.22	-	-	-	-	-	-	1.41
Roasted Not Decaffeinated	29.97	37.41	59.21	149.64	63.50	118.06	115.53	115.26	127.73
Roasted Decaffeinated	-	5.62	13.52	9.38	55.96	47.21	52.54	51.78	112.38
<b>Value (\$1,000)*</b>									
Green Not Decaffeinated	513.4	0.0	414.2	2,273.0	0.0	1,071.9	998.2	480.5	740.6
Green Decaffeinated	108.5	85.5	0.0	0.0	0.0	0.0	0.0	0.0	23.9
Roasted Not Decaffeinated	211.2	272.8	495.3	804.0	390.3	740.3	685.5	770.6	923.7
Roasted Decaffeinated	0.0	57.0	67.9	90.0	207.4	166.0	176.8	167.3	370.3
<b>Total</b>	<b>833.0</b>	<b>415.3</b>	<b>977.4</b>	<b>3,167.1</b>	<b>597.8</b>	<b>1,978.3</b>	<b>1,860.5</b>	<b>1,418.4</b>	<b>2,058.5</b>

\* Free Along Ship Export Value (F.A.S.). Data Source: Converted from data by the U.S. Dept. of Commerce, Bureau of the Census.

Figure 4 compares the average export price of Hawaii-grown green beans exported directly to Japan with beans exported from the U.S. Mainland to Japan and elsewhere. In Figure 4, while it is noticeable that Hawaii-grown beans on an average commanded a higher price than other varieties exported from the U.S. Mainland, beans exported to Japan from the U.S. Mainland had a higher average price than those exported to all other destinations.

**Figure 4**



Notes: All prices are for regular (not decaffeinated) coffees only and are Free Along Ship Export Value (F.A.S.) basis. Hawaii's exports of green beans in 1996 and 1999 were reported zero, and prices for these years are missing. For plotting purpose, the price for each of these years is derived by averaging the prices reported for the years immediately before and after the said years. Data Source: Computed from data compiled by the U.S. Dept. of Commerce, Bureau of the Census.

### *Other foreign and niche markets*

In Asia and the Pacific region, other than Japan, S. Korea and Singapore, are high income countries and may have more market potential for Hawaii-grown coffee than

currently perceived. Singapore, which grew rapidly and became the fourth largest importer of U.S. coffee in 2003, had a total import value almost four times larger than that of South Korea. Although the country's import figures may not closely reflect its domestic consumption demand, local demand for coffee in Singapore has expanded substantially in recent years, as evidenced by the rapid expansion of Starbucks there. In addition to Taiwan and Hong Kong, other large and growing Chinese urban centers in the coastal regions are potential markets.

Starbucks, a chain of more than 4,000 coffee stores in North America, with many more around the globe, has announced that it will carry Hawaii-grown coffees starting April 2004. Recently, according to the Hawaii Coffee Association, the Department of Defense has included in its coffee purchasing plan, a million pounds of 100% Hawaii-grown coffee a year.

### ***Factors affecting demand***

There are a number of factors that could affect demand for Hawaii-grown coffee. Some of them are internal to the industry and are controllable. Others are external and are beyond the industry's ability to manage. Major factors are briefly discussed below.

*Consumer's perception:* Hawaii-grown coffees maintained customers and their willingness to pay through reputation (quality) and image (packaging) management and marketing effort. Consumers' willingness to pay a high price for a product depends on their perception about the product's quality and expectations of a product.

*Income level and changes in economic conditions:* Because of their high prices, only the minority coffee drinkers can afford to be regular consumers of Hawaii-grown coffees. Changes in the general economic conditions in the localities in which Hawaii-grown coffees are marketed, which affect consumer's disposable income, could affect the overall demand for Hawaii-grown coffees. The demand for Hawaii-grown coffee will thus be responsive to the economic conditions in the Mainland and Japan, where there are many consumers. Changes in economic conditions in the Mainland and Japan could also affect demand for Hawaii-grown coffees through their influence on the number of island visitors. A substantial amount of Hawaii-grown coffees was sold to visitors for consumption during their stay on the island and purchased as gift items.

## **IV. Competitive State**

### ***Major sources of product supply***

For decades, when Kona Coffee was the only known coffee grown in Hawaii until the late 1980's, market competition was between Hawaii-grown and foreign grown, Mainland-processed coffees. However, the rise of coffees grown in Kauai, Maui and Molokai in recent years has created a new competitive environment in the specialty market. In addition to Hawaii-grown brands, a number of Mainland-processed brands can also be found competing for shelf space in retail outlets in Hawaii. Among the most

visible non-Hawaii brands include Mill Stone, Peet's Coffee, Seattle Best, and Starbucks Colombia.

Specialty coffees, which are almost entirely made of Arabica varieties, are grown in various parts of the world, including Central and South Americas, Africa, as well as Asia. In Japan's specialty market, Hawaii-grown Kona Coffee and the Jamaica Blue Mountain are among the well-known, which have a longer market history. Aside from Jamaica and Hawaii, Japan imports specialty coffees produced elsewhere, including countries in Central and South America, Africa, as well as its Asian neighbors, India and Indonesia.

### ***Features/characteristics of competitive products***

Other than the quality of coffee beans at green stage, which is a dependent of many factors at the farm and processing steps prior to milling, the quality of coffee in the cup depends on many variables between roasting and when a cup of coffee is served. Thus the majority of coffee traded in the world market, which requires shipments across a long distance, is in green form. However, the introduction of the one-way valve bag that prolongs the freshness of roasted beans in the 1980s has changed the composition of beans shipment. The share of roasted beans in the total amount of coffee imported into the U.S. increased from 1.5% in volume and 3.2% in value in 1995 to 3.3% and 9.3%, respectively, by 2003. Roasted coffee imported into the U.S. mainly came from Canada, Germany, Sweden, and Italy.

Hawaii-grown roasted beans of both regular and decaffeinated coffees exported directly to Japan increased substantially in both volume and value, while over the same period, the export volume of Hawaii-grown green beans declined (Table 5). In Japan's specialty market, the world's most expensive coffee variety, Jamaican Blue Mountain, controlled by a Japanese company, is an obvious competitor of Kona Coffee. With its longer established high-end market and the nature of market in which specialty coffees are sold, Kona Coffee has a smaller number of competitors than the other Hawaii-grown varieties. However, as the popularity of specialty coffee continues, with increased complexity in the processing and marketing techniques, the number of competitors in the specialty coffee markets is likely to increase in the future.

### ***Competitive analysis of Hawaii's product***

**Price and quality:** Hawaii-grown coffees do not engage in direct price competition, but resort to product differentiation as the main method of competition. Product differentiation in coffee begins from the recognition of farm location, to managing bean quality, to manipulating taste and aroma, and to packaging.

Among eight brands of roasted coffees surveyed in August 2004, the Kona Coffee brands, on the average, commanded the highest retail price, approximately twice those of other Hawaii-grown varieties.<sup>9</sup> Table 5 compares average retail prices of roasted

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<sup>9</sup> In some outlets, roasted Kona Coffee was priced \$29.95 per 8 oz. bag.

coffee beans of commonly found brands in Hawaii retail outlets. The last column on the right hand side in Table 5 also provides a basic indicator suggesting that there is a vast difference in profit margins specialty coffee roasters can obtain between using Hawaii-grown beans and Colombian Mild Arabica beans sold in the New York market. Although their prices are high, the competitive edge of Hawaii-grown coffees comes from their higher bean quality. With the availability of cheap imported Arabica beans, the high cost of Hawaii-grown green beans is a strong incentive for counterfeiting.

**Table 5                      Competitiveness of the Competing Brands**

<b>Brands</b>		<b>Roasted Beans (\$/lb as of August 2004)</b>	<b>Green Beans (\$/lb, 2003 average)</b>	<b>Roasted-Green Price Ratio</b>
1.	Kona Coffee	22.35	7.82	2.9:1
2.	Kauai Coffee	11.03	NA	NA
3.	Molokai Coffee	15.70	NA	NA
4.	Maui Coffee	11.73	NA	NA
5.	Peet's Coffee	17.66	0.65	27.2:1
6.	Seattle Best	12.25	0.65	18.8:1
7.	Starbucks Colombia	12.96	0.65	19.9:1
8.	Millstone	13.34	0.65	20.5:1

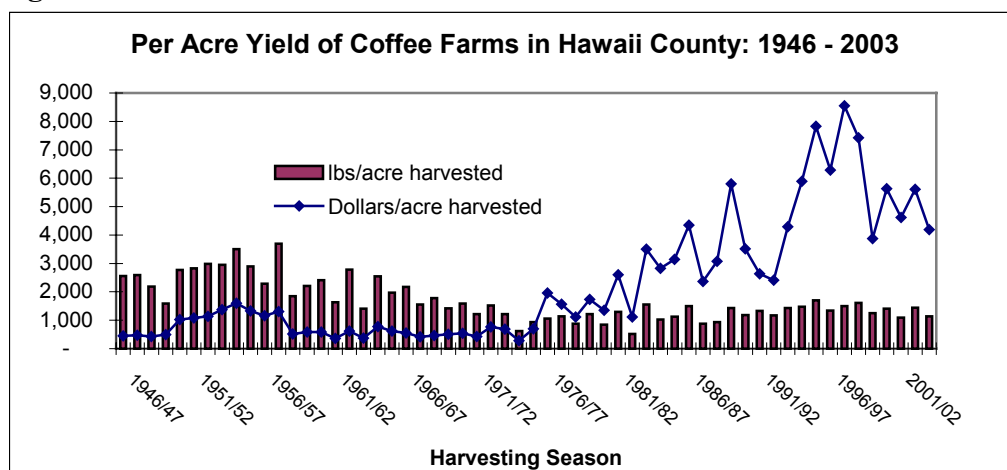
Notes: Prices of roasted beans are the un-weighted average retail prices prevailed in Hawaii as of August 2004; green bean prices for non-Hawaii-grown brands are whole-year average prices of Colombian Mild Arabica (CMA) coffee prevailed in international markets; Kona Coffee green bean price is the weighted average export price. The actual prices of green beans roasters of non-Hawaii-grown brands paid for are unknown. Since specialty coffees are produced from Arabica varieties, CMA green coffee price, the highest among all coffees sold in the international market, is the closest base-price roasters would have to pay to obtain green beans.

**Quantity and productivity:** World supply of high quality specialty coffee, although remains limited, is growing. A combination of price incentive in the specialty market and increased competition from Brazil and Vietnam has encouraged some coffee producers to switch to producing specialty coffee. How successful these new comers in the specialty market will be depends on many factors, including both natural and manmade. Although the limited supply of land and climate required to produce high quality coffee beans creates a limit for competition in the specialty market, increasingly sophisticated management, processing and marketing methods mean competition can increase beyond the limit of nature.

The productivity of an average coffee farm in Hawaii, in terms of yield per acre, is today much lower than it was fifty years ago, due to pruning and harvesting technique adjustments in response to labor scarcity. However, relative to world average it is still high and has been rising in recent years, especially in terms of per acre output value (Figure 5). Input cost of coffee production in Hawaii is probably the highest in the world. However, given high market-clearing price they command, with improved farm productivity, quality, and image maintenance Hawaii-grown coffees should remain competitive in the high-end specialty market.



Figure 5



Data Source: Hawaii Coffee Biannual Report, various issues, HASS.

**Packing:** In the in-state markets, Hawaii-grown coffee is sold in various forms of packages. The one-way valve bag and the internet have enabled both coffee farm operators and roasters to be more creative in their operations. These new technologies have enabled small farmers to create their own brands, package and sell roasted beans to the final consumers themselves, allowing farmers to create and retain more value to their products.

Agricultural-tourism is a relatively new concept that has been integrated into the coffee industry in Hawaii. Agricultural-tourism is in itself a marketing method that is suitable for some coffee farms. Other than to establish relationship with consumers, it educates consumers about the various aspects of production processes, which leads to better understanding about coffee, improves consumer's appreciation of the product and loyalty. The whole tour process, thereby, will create a market niche for farm operators. It will also help promote Hawaii coffee industry as a whole. However, success will depend on whether farms that operate the tour have high quality coffee to offer visitors and whether the tour helps improve visitors' understanding about coffee farm and coffee processing operations.

**Transportation:** For the U.S. mainland market, Hawaii has a transportation cost disadvantage compared to coffee producers in Central and South America. In the Asian market, particularly Japan, Indonesia is currently the only known specialty coffee producing country that has geographical advantage over Hawaii.

**Exchange rate changes:** The effect of an exchange rate change on Hawaii's coffee exports depends on the degree of rate change and foreign consumers' price sensitivity. An appreciation of the dollar value against foreign currency, given all else remains constant, would raise the price of Hawaii-grown coffee for foreign consumers. Only 10% of green Kona Coffee beans were exported directly to foreign destinations in 2003, with high market concentration (91.3%) in Japan. However, due to a sizable portion of Hawaii-grown coffee being exported via the U.S. Mainland, direct mail order and tourist purchases, and that the total coffee exports and their destinations are

unknown, the impact of exchange rate changes is thus unclear. Nonetheless, as long as foreign economies are healthy and growing, exchange rate risk should be minimal. Currently, the U.S. Mainland and Asian Pacific Rim economies, main export destinations for Hawaii-grown coffees, are in positive conditions and trends.

### ***Some risks and challenges***

Threats to the coffee farming industry include market uncertainties, the weather, pests, increasing scarcity and rising costs of land, water and labor. Droughts, heavy rainfalls, or volcanic eruptions could affect coffee production negatively.

**Blend coffees:** Particularly those made of low-priced import varieties mixed with Hawaii-grown coffee, especially with Kona Coffee, blend coffees have been an issue of concern among Hawaii industry members. Blending low-priced varieties with the well-known name of Kona Coffee, for example, with a label indicating that the package contains Kona Coffee, helps promote sales and raise profitability of a business. However, the label could mislead consumers to think that the content is Kona Coffee. Thus, blend coffees could compete away Kona Coffee consumers. Also, if consumers believed that the package of blend coffees is of Kona Coffee, due to unclear labeling, and if the content is poor in quality, blend coffees could damage the reputation of pure Kona Coffee.

However, blend coffees could also be beneficial to pure Kona Coffee, through at least two possible effects. First, blending less expensive import varieties with pure Kona Coffee, the world's second most expensive coffee after the Jamaica Blue Mountain brand, helps expand the market base for Kona Coffee by overcoming the budget constraint and fitting to some consumers' tastes who would not normally purchase Kona Coffee in its pure form. Second, the quantity supplied of pure Kona Coffee is reduced by the amount used for blending and hence creates a positive pressure on the price of pure Kona Coffee.

**Counterfeiting:** The premium that Hawaii-grown coffees command and the availability of cheap import arabica varieties together creates an incentive for counterfeit operations. Counterfeit coffees could depress the market price by artificially increasing the supply of a given type/brand, particularly Kona Coffee. Also, poor quality content in the counterfeit packages, or packages with misleading labels could turn away consumers causing a drop in demand. The point-of-origin certification administered by the DOA and enforcement of the "Truth Labeling" law, which requires distributors to clearly declare the truth content of Hawaii-grown coffee based on point of origin is currently being implemented to address this concern. However, the effectiveness of the point of origin certification and the enforcement of this law will depend on industry members' participation and cooperation. As Hawaii's coffee industry grows and evolves, the scale and complexity of the problems are likely to increase.

**Short-run over-supply:** High prices of specialty products tend not only to induce counterfeiting that results in an artificial supply increase, it also tends to induce production expansion by legitimate farmers, both of which depress prices. A loose net of nearly 700 small growers of Kona Coffee that exists in the Hawaii Island, many of whom have their own brand names, means that a short-run supply glut of Kona Coffee could occur. Increasing cooperation among farmers in production and marketing through an agricultural cooperative could help stabilize supply and price.

**Pests:** Several types of pests have been reported to have caused damages to some coffee farms in the state include black twig borers and root-knot nematodes. However, both pest types are now under control, although a solution to the nematode problem is costly (Bittenbender and Smith, 2004).

**Others:** There is always a possibility that demand for coffee will shift due to changes in income, consumer preferences, and the availability of substitutes. Land, water, and labor prices will continue to rise in the long run as competition for resources increases due to population growth and expansion of other, non-agricultural activity.

## **V. Conclusion**

Despite the two Kona Coffee price crashes in the early and late 1990's, Kona Coffee production grew since the mid-1990, and price performed exceptionally well since the mid 1970's. Other Hawaii-grown varieties experienced rapid output expansion and strong price performance.

Most of Hawaii-grown coffees were exported, largely to the Mainland, but the volume is unknown. Most exports were in green, but the exports of roasted beans have been growing considerably in both volume and value. With geographical proximity and regional economic growth trends, the West Coast U.S. Mainland and Asia Pacific Rim economies will continue to offer market opportunities for high quality Hawaii-grown coffees. Singapore, with its relatively new coffee consuming trend, and China are the two economies that seem to offer expanding market opportunities for Hawaii-grown coffee. However, high tariff rates remained barriers to Hawaii-grown coffee in the Asian markets. Russia's coffee imports increased rapidly in recent years, a potential market for Hawaii-grown coffees.

The Hawaii coffee industry has more room for growth. However, rising demand for specialty coffee, combined with competitive pressure in the commodity coffee market, will likely result in greater entry and hence competition in the specialty market. While product differentiation, a main method of competition, does not depress prices directly, the premium that Hawaii-grown coffee commands, especially Kona Coffee, provides an incentive for supply expansion, which could depress prices if production expands too rapidly. Also, history has shown that high premium induced counterfeit operations, which depressed price and could possibly damage the reputation of pure Hawaii-grown coffee.

Quality maintenance and product differentiation are the major factors determining long-term success of Hawaii coffee industry. Product differentiation based on point of origin is critical because bean quality is partially determined by natural factors (soil composition, rain, temperature, and sunlight), which are location-specific, in addition to cultural practices and cherry processing.

The overall success will require joint efforts by the industry, government, and public institutions. Government, public institutions, and private bodies (nonprofit and for-profit) have differing objectives and comparative advantage and, thus, their areas of effectiveness and efficiency are different in handling certain aspects of industry's problems. For instance, government would be more effective and efficient in enforcing the "truth labeling law," by taking advantage of the existing legal infrastructure, while it would be more effective and efficient for the industry to monitor and report cases to the law enforcement body. Currently, the Hawaii Coffee Association is active in marketing Hawaii-grown coffees, the Kona Coffee Council in marketing and quality management for Kona Coffee, the Department of Agriculture in activities involving inspection and issuance of bean grades and point of origin certification and the enforcement of the "Truth Labeling" law, and the College of Tropical Agriculture and Human Resources and Hawaii Agriculture Research Center in research and extension services.

Increasing cooperation among farmers in production and marketing through an agricultural cooperative or association will mitigate market risk associated with short-run supply glut. Pests can be a serious threat and requires monitoring on a regular basis. Finally, land and water resource management and appropriate labor policy cannot be undermined if the competitiveness of Hawaii coffee industry is to be sustained in the long run.

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